

Cyprus Thompson Creek

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Director, Water Division  
USEPA, Region 10  
Park Place Building, 13th Floor  
1200 Sixth Avenue, WD-134  
Seattle, Washington 98101

RECEIVED  
SEP 03 1987  
IDAHO OPERATIONS OFFICE

Re: Comments on Permit Number ID-002540-2

Dear Sir or Madam:

Below are some comments Cyprus feels should be taken into consideration before issuing the final discharge permit for the Thompson Creek Molybdenum Mine. As proposed in draft form, the new effluent limits are much more stringent than the previous permit conditions. This is despite extensive monitoring of water quality, water chemistry and aquatic biology, which all show no biological damage or problems in either Squaw Creek or Thompson Creek. Reference is made to Cyprus monitoring reports filed each of the last seven years with seven agencies of State and Federal governments.

Even though these reports document continuing excellent water quality, the new draft permit includes limitations and conditions on numerous constituents which have been shown not to be problems.

The EPA has applied several new methods in calculating the new permit conditions. The authority and the applicability of such new methods is questionable and Cyprus urges reconsideration. Several areas are objectionable, the use of "Gold Book" criteria as State standards, the way the new methodology incorporated the Idaho mixing zone limitation of 25% of stream flow in conjunction with the criteria, the waste load allocation method, and the exclusion of ore mining and dressing effluent guidelines.

These are discussed in detail below.

1. Use of Gold Book criteria as State standards.

In 1980, EPA first promulgated National Water Quality Criteria to update the old Red Book criteria. At the time of criteria derivation, the methodology was subject to intense criticism and controversy. The fear of arbitrary application of "national criteria" to all streams in all places was raised, and is now being realized. The criteria data base is constructed on laboratory data and laboratory water, and is ultimately manipulated mathematically to find the lowest concentration which shows no effect on the most sensitive laboratory species. Laboratory conditions simply do not fairly reflect the natural- and man-modified environment outside of the laboratory, which survives and thrives on diverse habitats, including diverse types of water chemistry.

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This has been thoroughly documented in a discourse by Buikima and Cherry. Evaluation of the 1980 U.S. EPA Water Quality Criteria for Selected Trace Metals (1982). The Buikima and Cherry study found numerous cases where the Criteria values were exceeded in natural stream systems coincident with robust aquatic communities. The attached Table 17, Page 53, is but one example from this discourse. In fact, many trace metal criteria are exceeded routinely at the National Network of USGS Benchmark Stations. Table 11, page 44, of the Buikima and Cherry study is attached. Note that the 1980 lead criteria values were exceeded in 71 of 481 observations. We do not intend that these examples indicate that the criteria are wrong, but rather demonstrate the futility of trying to force-fit a court-ordered national criteria into the guise of national water quality standards.

As one mine in the mountains of Idaho, Cyprus does not presume to be able to revise the "Gold Book" methodology or to provide better national criteria. We only request that EPA acknowledge the arbitrary nature of the criteria in their application as water quality standards for the State of Idaho.

We are aware of no State rule making procedure which adopted the "Gold Book" criteria as enforceable standards, or even as State criteria. Therefore, we ask that the EPA at least modify the use of the criteria in its methodology in deriving effluent limits. The criteria are not Idaho State standards, and their use as State standards in the equations of EPA's Permit Writers Guide to Water Quality-Based Permitting for Toxic Pollutants (February, 1987) is inappropriate.

2. Calculation methods using the Idaho State Policy of allowing only 25% of the volume of receiving stream flow.

If the aforementioned Gold Book criteria are allowed to replace Idaho State standards, then the intent and purpose of the 25% mixing policy must be evaluated. Simply dividing the effluent limits by four, after calculation of non-toxic effluent, and after applying worst case dilution ratios is unnecessarily over-protective and arbitrary.

We can agree that an acutely toxic mixing zone condition would require application of the 25% exclusion policy. But to apply the exclusion on top of the extremely conservative criteria values is unwarranted. Use of the State Policy in addition to the criteria maximum concentration (final acute value) is arguably required by State law. But since the purpose of protection of the mixing zone has already been accomplished in the derivation of final chronic values (criteria continuous concentrations), the further division by four must be considered in the prior calculations.



By their very definition, the instream national criteria values apply to receiving water. As the draft permit is proposed, the instream water quality values are limited to one fourth of the national criteria. The system is flawed.

If the Gold Book criteria values are to be considered as instream State Water Quality Standards, then the methodology of the February, 1987 guidelines must be modified so that the resultant instream water quality is not limited in Idaho to only one fourth of these criteria. We do not believe that the State of Idaho anticipates that discharges meet limits four times more stringent than required for national criteria. The formulae in the February 87 guidelines are inapplicable as used in conjunction with 25% mixing zone policy.

### 3. The Waste Load Allocation Method

The waste load allocation method assumes that effluent from the upstream outfall (001) is additive to the downstream outfall (002). In fact, the extremely low concentrations calculated for effluent limits are more in the realm of micronutrients than pollutants. Trace metals are rapidly chelated, consumed, precipitated or otherwise made biologically unavailable in natural streams. The metal contents of natural stream bottom sediments in the naturally mineralized area in the mine vicinity is proof enough that excellent biological productivity and diversity is maintained along with low metal concentration in the waters. Presuming that trace metal levels from outfall 001 will remain in solution and will remain biologically available at outfall 002, is overly conservative. The result of using the waste load allocation factor of 2 for two outfalls, in conjunction with the 25% mixing zone policy, results in a safety factor of eight being applied to the already conservative Gold Book values. Cyprus believes that the trace levels of metals in the effluent limits proposed at outfall 001 would not even be measurable in the stream at outfall 002.

### 4. Exclusion of biological monitoring or instream chemical monitoring as an equal or superior method of determining compliance with State water quality standards.

The many years of intensive water quality monitoring conducted by Cyprus have shown no aquatic impact from mine activities to date. This indicates compliance with water quality objectives. EPA's arbitrary dismissal of the Ore Mining and Dressing Point Source Category Effluent Guidelines (40 CFR Part 440, Sub Part J) as being "insufficient to attain or maintain existing water quality standards" is unsubstantiated. In fact, the data base supports the fact that Idaho Water Quality Standards have been maintained. No violations have been alleged, observed or indicated by monitoring. We feel that

the Federal Regulations of Part 440 should govern over informal EPA Policy. Cyprus invites the EPA to contact the State of Idaho for facts to the contrary.

Summary

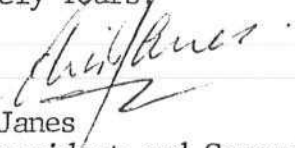
We are but one mine in the mountains of Idaho. We cannot revise the Gold Book or the EPA internal guidelines, or the State Water Quality Standards. We do ask that the proposed permit be recalculated with preference given to reflect the water quality needs of the receiving stream, instead of the conservative cumulation of worst case conditions.

We ask that the "Gold Book" values, if they are to be used as State standard surrogates, be used only as criteria in the receiving water downstream of the mixing zone. We ask that the 25% mixing zone exclusion be calculated using the ore mining and dressing effluent guidelines. We ask that the waste load allocation be used with the acknowledgement that the two outfalls are not at the same location, and acknowledging that almost total sequestration of trace metals will occur between the two outfall localities. We ask that the instream biological and chemical monitoring required in the permit be allowed equal weight in determining whether compliance with State Water Quality Standards has been achieved.

The Cyprus Thompson Creek mine is confident that water quality objectives have been maintained under the previous permit conditions. If the conditions are required by law to be tightened, so be it. But in the absence of legal, technical or biological imperative, we request that the proposed permit be recalculated to achieve the minimum compliance required by law, rather than the most stringent limits that can be derived using overly conservative assumptions.

Thank you for the opportunity to comment on permit No. Id 002540-2. We look forward to discussing the matter further.

Sincerely Yours,

  
Chris James  
Vice President and General Manager

Governor Andrus

cc: Wally Scarboro, USEPA, Boise  
Jack Peterson, IMA  
Walt Poole, Idaho Dept. of Health & Welfare  
Glen Saxton, Idaho Dept. of Water Resources  
Tom Markland, Idaho Dept. of Lands  
Mark Armbruster, Idaho Dept. of Fish & Game  
Pat Green, USFS  
Dan Bartholme, USBLM

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Table 11. Proportion of USGS bench-mark observations that exceed the 1980 Water Quality Criteria if criteria are expressed as total recoverable metals.

Metal	Number of Observations	1980 Criteria	
		Maximum Concentration	24-hr Average
Cadmium	441	15	23
Copper	514	29	25*
Lead	485	19	71
Nickel	36	0	0
Zinc	561	11	15*

\*Criterion is an absolute number with no water hardness interaction.



Table 17. Comparison of species richness, hardness and metal concentrations for an unnamed creek near Palmerton, Pennsylvania.

Station	Number of Macroinvertebrate Taxa	Hardness* (mg/l as $\text{CaCO}_3$ )	Concentration ( $\mu\text{g/l}$ )				
			Cadmium	Copper	Nickel	Lead	Zinc
I	20	50	6	90	20	200	423
II	22	50	5	117	20	200	117
III	22	50	5	117	20	200	47
IV	30	50	21	120	20	200	17

\*Hardness estimated at 50 mg/l as  $\text{CaCO}_3$  because alkalinity values ranged from 34 to 41 mg/l as  $\text{CaCO}_3$ .